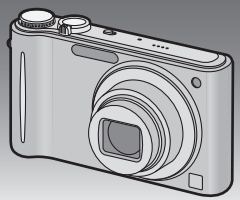
Panasonic

Basic Operating Instructions
Digital Camera

Model No. DMC-ZX3

LUMIX



Before use, please read these instructions completely.

Please also refer to Operating Instructions (PDF format) recorded on the CD-ROM containing the Operating Instructions (supplied).
You can learn about advanced operation methods and check the Troubleshooting.

Web Site: http://www.panasonic-europe.com

Model number suffix “EB” denotes UK model.

EB

VQT2M05

Dear Customer,

We would like to take this opportunity to thank you for purchasing this Panasonic Digital Camera. Please read these Operating Instructions carefully and keep them handy for future reference. Please note that the actual controls and components, menu items, etc. of your Digital Camera may look somewhat different from those shown in the illustrations in these Operating Instructions.

Carefully observe copyright laws.

- Recording of pre-recorded tapes or discs or other published or broadcast material for purposes other than your own private use may infringe copyright laws. Even for the purpose of private use, recording of certain material may be restricted.

Information for Your Safety

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE,

- **DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.**
- **USE ONLY THE RECOMMENDED ACCESSORIES.**
- **DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

THE SOCKET OUTLET SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.

Product Identification Marking is located on the bottom of units.

Caution for AC mains lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug. Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362. Check for the ASTA mark ⓐ or the BSI mark ♆ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as stated below. If in any doubt please consult a qualified electrician.

■ IMPORTANT

The wires in this mains lead are coloured in accordance with the following code: Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows: The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue. The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF-KEEP DRY.

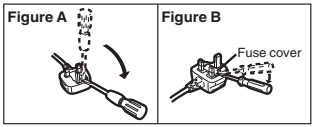
■ Before use

Remove the connector cover.

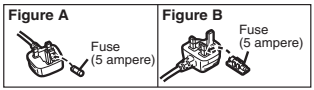
■ How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.



2. Replace the fuse and close or attach the fuse cover.



■ About the battery pack

CAUTION
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

- Do not heat or expose to flame.
- Do not leave the battery(ies) in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.

Warning
Risk of fire, explosion and burns. Do not disassemble, heat above 60 °C or incinerate.

■ About the battery charger

CAUTION!
- **DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.**
- **DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.**
- **DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.**
- **DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.**

- The battery charger is in the standby condition when the AC power supply cord is connected. The primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

■ Cautions for Use

- Always use a genuine Panasonic AC adaptor (DMW-AC5E; optional).
- When using an AC adaptor, use the AC cable supplied with the AC adaptor.
- Do not use any other AV cables except the supplied one.
- Do not use any other cables except a genuine Panasonic HDMI mini cable (RP-CDHM15, RP-CDHM30; optional).
  Part numbers: RP-CDHM15 (1.5 m) (5 feet), RP-CDHM30 (3.0 m) (10 feet)
- Do not use any other USB connection cables except the supplied one.

Keep the camera as far away as possible from electromagnetic equipment (such as microwave ovens, TVs, video games etc.).
- If you use the camera on top of or near a TV, the pictures and sound on the camera may be disrupted by electromagnetic wave radiation.
- Do not use the camera near cell phones because doing so may result in noise adversely affecting the pictures and sound.
- Recorded data may be damaged, or pictures may be distorted, by strong magnetic fields created by speakers or large motors.
- Electromagnetic wave radiation generated by microprocessors may adversely affect the camera, disturbing the pictures and sound.
- If the camera is adversely affected by electromagnetic equipment and stops functioning properly, turn the camera off and remove the battery or disconnect AC adaptor (DMW-AC5E; optional). Then reinsert the battery or reconnect AC adaptor and turn the camera on.

Do not use the camera near radio transmitters or high-voltage lines.
- If you record near radio transmitters or high-voltage lines, the recorded pictures and sound may be adversely affected.

Information for Users on Collection and Disposal of Old Equipment and used Batteries

These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste.
For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC and 2006/66/EC.
By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.
For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.
Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union
If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

[Information on Disposal in other Countries outside the European Union]
These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.

Note for the battery symbol (bottom two symbol examples):
This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

Contents

Information for Your Safety 2
Accessories 8
Names of the Components 10
Charging the Battery 12
About the Built-in Memory/the Card 14
Inserting and Removing the Card (optional)/the Battery 15
Setting Date/Time (Clock Set) 16
• Changing the clock setting 16
Setting the Menu 17
Selecting the [REC] Mode 18
Taking pictures using the automatic function (iA: Intelligent Auto Mode) ... 19
• Scene detection 20
• AF Tracking Function 20
Recording Motion Picture 21
Playing back Pictures ([NORMAL PLAY]) 22
Deleting Pictures 22
Reading the Operating Instructions
(PDF format) 23
Specifications 25

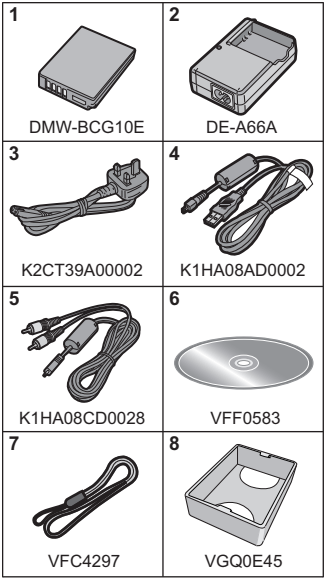
Accessories

Check that all the accessories are included before using the camera.
Product numbers correct as of January 2010. These may be subject to change.

1 Battery Pack
(Indicated as **battery pack** or **battery** in the text)
Charge the battery before use.
2 Battery Charger
(Indicated as **battery charger** or **charger** in the text)
3 AC Mains Lead
4 USB Connection Cable
5 AV Cable
6 CD-ROM
- Software:
Use it to install the software to your PC.
- Operating Instructions

7 Hand Strap
8 Battery Case

- SD Memory Card, SDHC Memory Card and SDXC Memory Card are indicated as **card** in the text.
- **The card is optional.**
You can record or play back pictures on the built-in memory when you are not using a card.
- Consult the dealer or your nearest Service Centre if you lose the supplied accessories. (You can purchase the accessories separately.)



Sales and Support Information

Customer Care Centre

- For customers within the UK: 0844 844 3852
- For customers within the Republic of Ireland: 01 289 8333
- Visit our website for product information www.panasonic.co.uk.
- E-mail: customer.care@panasonic.co.uk

Technical Support for AV Software

- For customers within the UK: 0844 844 3869
- For customers within the Republic of Ireland: 01 289 8333

Direct Sales at Panasonic UK

- For customers: 0844 844 3856
- Order accessory and consumable items for your product with ease and confidence by phoning our Customer Care Centre Monday – Thursday 9.00 a.m. – 5.30 p.m., Friday 9.30 a.m. – 5.30 p.m. (Excluding public holidays)
- Or go on line through our Internet Accessory ordering application at www.pas-europe.com.
- Most major credit and debit cards accepted.
- All enquiries transactions and distribution facilities are provided directly by Panasonic UK Ltd.
- It couldn't be simpler!
- Also available through our Internet is direct shopping for a wide range of finished products, take a browse on our website for further details.

■ Optional Accessories

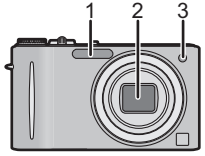
- Battery Pack
  DMW-BCG10E
- HDMI mini cable:
  RP-CDHM15/RP-CDHM30
- Marine Case
  DMW-MCZX3E
- SDXC Memory Card
  64 GB: RP-SDW64GE1K
  48 GB: RP-SDW48GE1K
- SDHC Memory Card
  32 GB: RP-SDW32GE1K/RP-SDP32GE1K
  24 GB: RP-SDP24GE1K
  16 GB: RP-SDW16GE1K/RP-SDP16GE1K
  8 GB: RP-SDW08GE1K/RP-SDP08GE1K/RP-SDR08GE1A
  4 GB: RP-SDW04GE1K/RP-SDP04GE1K/RP-SDR04GE1A
- SD Memory Card
  2 GB: RP-SDP02GE1K/RP-SDR02GE1A
- AC Adaptor
  DMW-AC5EB
- DC Coupler*
  DMW-DCC5F

* Ensure that the AC adaptor and DC coupler are purchased in a set. Do not use if sold separately.

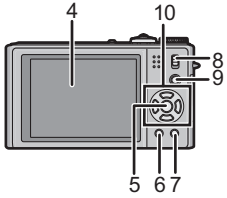
Some optional accessories may not be available in some countries.

Names of the Components

1 Flash
2 Lens
3 Self-timer indicator
AF assist lamp

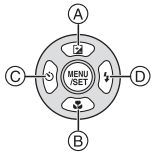


4 LCD monitor
5 [MENU/SET] button
6 [DISPLAY] button
7 [Q.MENU]/Delete button
8 [REC]/[PLAYBACK] selector switch
9 Motion picture button

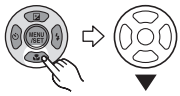


10 Cursor buttons

Ⓐ: ▲/Exposure compensation/Auto Bracket/White Balance fine adjustment
Ⓑ: ▼/Macro Mode
AF Tracking
Ⓒ: ◄/Self-timer button
Ⓓ: ►/Flash setting button

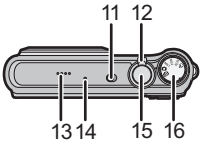


In these operating instructions, the cursor buttons are described as shown in the figure below or described with ▲/▼/◄/►.
e.g.: When you press the ▼ (down) button



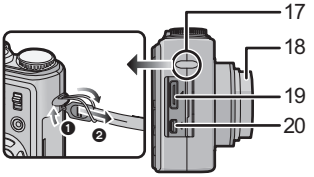
or **Press ▼**

11 Camera ON/OFF switch
12 Zoom lever
13 Speaker
14 Microphone
15 Shutter button
16 Mode dial



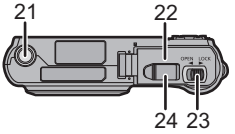
17 Hand strap eyelet
- Be sure to attach the hand strap when using the camera to ensure that you will not drop it.

18 Lens barrel
19 [HDMI] socket
20 [AV OUT/DIGITAL] socket



21 Tripod receptacle
- When you use a tripod, make sure the tripod is stable when the camera is attached to it.

22 Card/Battery door
23 Release lever



24 DC coupler cover
- When using an AC adaptor, ensure that the Panasonic DC coupler (DMW-DCC5; optional) and AC adaptor (DMW-AC5E; optional) are used.
- We recommend you use a battery with sufficient battery power or the AC adaptor when recording motion pictures.
- If while recording motion pictures using the AC adaptor and the power supply is cut off due to a power outage or if the AC adaptor is disconnected etc., the motion picture being recorded will not be recorded.

Charging the Battery

■ About batteries that you can use with this unit

The battery that can be used with this unit is DMW-BCG10E.

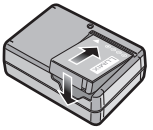
It has been found that counterfeit battery packs which look very similar to the genuine product are made available to purchase in some markets. Some of these battery packs are not adequately protected with internal protection to meet the requirements of appropriate safety standards. There is a possibility that these battery packs may lead to fire or explosion. Please be advised that we are not liable for any accident or failure occurring as a result of use of a counterfeit battery pack. To ensure that safe products are used we would recommend that a genuine Panasonic battery pack is used.

- **Use the dedicated charger and battery.**
- **The camera has a function for distinguishing batteries which can be used safely. The dedicated battery (DMW-BCG10E) supports this function. The only batteries suitable for use with this unit are genuine Panasonic products and batteries manufactured by other companies and certified by Panasonic. (Batteries which do not support this function cannot be used). Panasonic cannot in any way guarantee the quality, performance or safety of batteries which have been manufactured by other companies and are not genuine Panasonic products.**

■ Charging

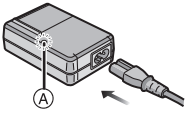
- **The battery is not charged when the camera is shipped. Charge the battery before use.**
- Charge the battery with the charger indoors.
- Charge the battery in a temperature between 10 °C to 35 °C (50 °F to 95 °F). (The battery temperature should also be the same.)

1 Attach the battery paying attention to the direction of the battery.



2 Connect the AC mains lead.

- Charging starts when the [CHARGE] indicator Ⓐ lights green.
- Charging is properly complete when the [CHARGE] indicator Ⓐ turns off.



3 Detach the battery after charging is completed.

■ Charging time

Charging time	Approx. 130 min

■ Approximate operating time and number of recordable pictures

Number of recordable pictures	Approx. 330 pictures
Recording time	Approx. 165 min
Playback time	Approx. 300 min

Recording conditions by CIPA standard

- CIPA is an abbreviation of [Camera & Imaging Products Association].
- Normal Picture Mode
- Temperature: 23 °C (73.4 °F)/Humidity: 50% when LCD monitor is on.
- Using a Panasonic SD Memory Card (32 MB).
- Using the supplied battery.
- Starting recording 30 seconds after the camera is turned on. (When the Optical Image Stabilizer function is set to [AUTO].)
- **Recording once every 30 seconds** with full flash every second recording.
- Rotating the zoom lever from Tele to Wide or vice versa in every recording.
- Turning the camera off every 10 recordings and leaving it until the temperature of the battery decreases.

About the Built-in Memory/the Card

Built-in Memory

- **Memory size: Approx. 40 MB**
- The built-in memory can be used as a temporary storage device when the card being used becomes full.
- The access time for the built-in memory may be longer than the access time for a card.

Card

The following cards which conform to the SD video standard can be used with this unit.
(These cards are indicated as **card** in the text.)

Type of card which can be used with this unit	Remarks
SD Memory Card (8 MB to 2 GB)	• SDHC Memory Cards and SDXC Memory Cards can be used only in equipment that is compatible with their respective formats. • Check that the PC and other equipment are compatible when using the SDXC Memory Cards. **http://panasonic.net/avc/sdcard/information/SDXC.html**
SDHC Memory Card (4 GB to 32 GB)	
SDXC Memory Card (48 GB to 64 GB)	

- Only cards bearing the SDHC logo (indicating that the card conforms to SD video standards) may be used as 4 GB to 32 GB cards.
- Only cards bearing the SDXC logo (indicating that the card conforms to SD video standards) may be used as 48 GB to 64 GB cards
- Use a card with SD Speed Class* with “Class 4” or higher when recording motion pictures in [AVCHD Lite]. Also, use a card with SD Speed Class with “Class 6” or higher when recording motion pictures in [MOTION JPEG].
  * SD Speed Class is the speed standard regarding continuous writing.
- Please confirm the latest information on the following website.
  http://panasonic.jp/support/global/cs/dsc/
  (This Site is English only.)

Note

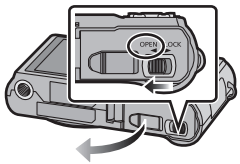
- Keep the Memory Card out of reach of children to prevent swallowing.

Inserting and Removing the Card (optional)/the Battery

• Check that this unit is turned off.
• We recommend using a Panasonic card.

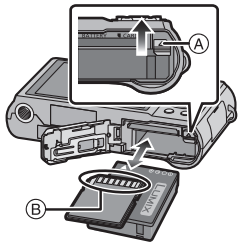
1 **Slide the release lever in the direction of the arrow and open the card/battery door.**

- **Always use genuine Panasonic batteries (DMW-BCG10E).**
- **If you use other batteries, we cannot guarantee the quality of this product.**



2 **Battery: Insert until it is locked by the lever Ⓐ being careful about the direction you insert it. Pull the lever Ⓐ in the direction of the arrow to remove the battery.**

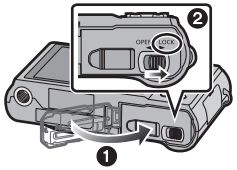
Card: Push it fully until it clicks being careful about the direction you insert it. To remove the card, push the card until it clicks, then pull the card out upright.



Ⓑ: Do not touch the connection terminals of the card.
• The card may be damaged if it is not fully inserted.

3 **❶:Close the card/battery door.**

❷:Slide the release lever in the direction of the arrow.

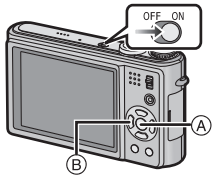


Setting Date/Time (Clock Set)

• The clock is not set when the camera is shipped.

1 Turn the camera on.

Ⓐ [MENU/SET] button
Ⓑ Cursor buttons



2 Press [MENU/SET].

3 Press ◄/► to select the items (year, month, day, hour, minute, display sequence or time display format), and press ▲/▼ to set.

🗑: Cancel without setting the clock.

4 Press [MENU/SET] to set.

5 Press [MENU/SET].

• Press [🗑] to return to the settings screen.

Changing the clock setting

Select [CLOCK SET] in the [REC] or [SETUP] menu, and press ►.
• It can be changed in steps **3**, **4** and **5** to set the clock.

Setting the Menu

This section describes how to select the Normal Picture Mode settings, and the same setting can be used for the [PLAYBACK] menu and [SETUP] menu as well.
Example: Setting [AF MODE] from [▣] to [👤] in the Normal Picture Mode

1 **Press [MENU/SET] to display the menu.**

2 **Press ▲/▼ to select [AF MODE], and then press ►.**

- Depending on the item, its setting may not appear or it may be displayed in a different way.

3 **Press ▲/▼ to select [👤] and then press [MENU/SET] to set.**

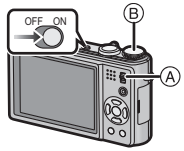
4 **Press [MENU/SET] to close the menu.**

Switching to other menus
e.g.: Switching to the [SETUP] menu **1** **Press [MENU/SET] to display the menu.** **2** **Press ◄.** **3** **Press ▼ to select the [SETUP] menu icon [🔧].** **4** **Press ►.** • Select a menu item next and set it.

Selecting the [REC] Mode

1 **Turn the camera on.**

Ⓐ [REC]/[PLAYBACK] selector switch
Ⓑ Mode dial



2 **Slide the [REC]/[PLAYBACK] selector switch to [📷].**

3 **Switching the mode by rotating the mode dial.**

■ **List of [REC] Modes**

iA Intelligent Auto Mode

The subjects are recorded using settings automatically selected by the camera.

Normal Picture Mode

The subjects are recorded using your own settings.

MS1 MS2 My Scene Mode

Pictures are taken using previously registered recording scenes.

SCN Scene Mode

This allows you to take pictures that match the scene being recorded.

Clipboard Mode

Record as a memo.

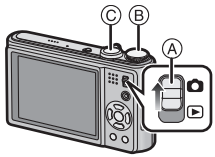
[REC] Mode: iA

Taking pictures using the automatic function (iA: Intelligent Auto Mode)

The camera will set the most appropriate settings to match the subject and the recording conditions so we recommend this mode for beginners or those who want to leave the settings to the camera and take pictures easily.

1 Slide the [REC]/[PLAYBACK] selector switch to [📷].

Ⓐ [REC]/[PLAYBACK] selector switch
Ⓑ Mode dial
Ⓒ Shutter button

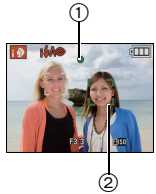


2 Set the mode dial to [iA].

3 Hold this unit gently with both hands, keep your arms still at your side and stand with your feet slightly apart.

4 Press the shutter button halfway to focus.

- The focus indication ① (green) lights when the subject is focused.
- The AF area ② is displayed around the subject's face by the Face Detection function. In other cases, it is displayed at the point on the subject which is in focus.
- The focus range is 3 cm (0.10 feet) (Wide)/ 1 m (3.28 feet) (Tele) to ∞.



5 Press the shutter button fully (push it in further), and take the picture.

Scene detection

When the camera identifies the optimum scene, the icon of the scene concerned is displayed in blue for 2 seconds, after which its colour changes to the usual red.

iA →	[i-PORTRAIT]	• Only when [iA] is selected
	[i-SCENERY]	
	[i-MACRO]	
	[i-NIGHT PORTRAIT]	
	[i-NIGHT SCENERY]	
	[i-SUNSET]	
	[i-BABY]	

- [iA] is set if none of the scenes are applicable, and the standard settings are set.
- When [ ], [ ] or [ ] is selected, the camera automatically detects a person's face, and it will adjust the focus and exposure. **(Face Detection)**

AF Tracking Function

It is possible to set the focus to the specified subject. Focus will keep following the subject automatically even if it moves.

1 Press ▲.

- [ ] is displayed in the upper left of the screen.
- AF Tracking frame is displayed in the centre of the screen.
- Press ▲ again to cancel.

2 Bring the subject to the AF tracking frame, and press ▼ to lock the subject.

- AF tracking frame will turn yellow.
- An optimum scene for the specified subject will be chosen.
- Press ▲ to cancel.

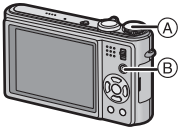
[REC] Mode: iA MS1 MS2 SCN

Recording Motion Picture

This can record high definition motion pictures compatible with the AVCHD format or motion pictures recorded in Motion JPEG.
Audio will be recorded in monaural.

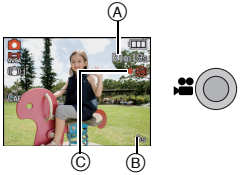
1 Slide the [REC]/[PLAYBACK] selector switch to [📷].

2 Switching the mode by rotating the mode dial.



Ⓐ Mode dial
Ⓑ Motion picture button

3 Start recording by pressing the motion picture button.



Ⓐ Available recording time
Ⓑ Elapsed recording time
- Release the motion picture button right after you press it.
- The recording state indicator (red) Ⓒ will flash while recording motion pictures.

4 Stop the recording by pressing the motion picture button again.

- If the built-in memory or the card becomes full in the middle of recording, the camera stops recording automatically.

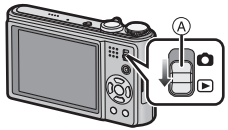
Note

- Motion pictures can be recorded continuously for up to 29 minutes 59 seconds. Also, motion picture recorded continuously in [MOTION JPEG] is up to 2 GB. (Example: [8m 20s] with [HD]) Remaining time for continuous recording is displayed on the screen.

[PLAYBACK] Mode:

Playing back Pictures ([NORMAL PLAY])

1 **Slide the [REC]/[PLAYBACK] selector switch Ⓐ to [▶].**



2 **Press ◄/► to select the picture.**

- After selecting the motion picture, press ▲ to start playback.

[PLAYBACK] Mode:

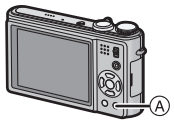
Deleting Pictures

Once deleted, pictures cannot be recovered.

- Pictures on the built-in memory or the card, that are being played back will be deleted.

1 **Select the picture to be deleted, and then press [🗑].**

Ⓐ [🗑] button



2 **Press ◄ to select [YES] and then press [MENU/SET].**

Reading the Operating Instructions (PDF format)

- You have practised the basic operations introduced in these operating instructions and want to progress to advanced operations.
- You want to check the Troubleshooting.

In these kinds of situations refer to Operating Instructions (PDF format) recorded on the CD-ROM containing the Operating Instructions (supplied).

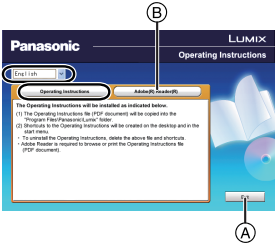
■ **For Windows**

1 **Turn the PC on and insert the CD-ROM containing the Operating Instructions (supplied).**

2 **Click the [Operating Instructions].**

3 **Select the desired language and then click [Operating Instructions] to install.**

Ⓐ To return to the install menu.



4 **Double click the “Operating Instructions” shortcut icon on the desktop.**

■ When the Operating Instructions (PDF format) will not open

You will need Adobe Acrobat Reader 5.0 or later or Adobe Reader 7.0 or later to browse or print the Operating Instructions (PDF format).
Insert the CD-ROM containing the Operating Instructions (supplied), click Ⓑ and then follow the messages on the screen to install.
(Compatible OS: Windows 2000 SP4/Windows XP SP2 or SP3/Windows Vista SP1 or SP2/Windows 7)

- You can download and install a version of Adobe Reader that you can use with your OS from the following Web Site.
  http://get.adobe.com/reader/otherversions

■ To uninstall the Operating Instructions (PDF format)

Delete the PDF file from the "Program Files\Panasonic\Lumix\" folder.
- When the contents in the Program Files folder cannot be displayed, click the [Show the contents of this folder] to display them.

■ For Macintosh

1 **Turn the PC on and insert the CD-ROM containing the Operating Instructions (supplied).**

2 **Open the "Manual" folder in the CD-ROM and then copy the PDF file with the desired language inside the folder.**

3 **Double click the PDF file to open it.**

Specifications

Digital Camera: Information for your safety

Power Source:	DC 5.1 V
Power Consumption:	1.2 W (When recording) 0.6 W (When playing back)

Camera effective pixels:	14,100,000 pixels
Image sensor:	1/2.33″ CCD, total pixel number 14,500,000 pixels, Primary colour filter
Lens:	Optical 8×zoom, f=4.5 mm to 36 mm (35 mm film camera equivalent: 25 mm to 200 mm)/F3.3 to F5.9
Digital zoom:	Max. 4×
Extra optical zoom:	Max. 16.9×
Focus range:	Normal: 50 cm (1.64 feet) (Wide)/2 m (6.56 feet) (Tele) to ∞ Macro/Intelligent Auto/Clipboard Mode: 3 cm (0.10 feet) (Wide)/1 m (3.28 feet) (Tele) to ∞ Scene Mode: There may be differences in the above settings.
Shutter system:	Electronic shutter+Mechanical shutter

Burst recording	
Burst speed:	Approx. 1.8 pictures/second
Number of recordable pictures:	Max. 5 pictures (Standard), max. 3 pictures (Fine).
Hi-speed burst	
Burst speed:	Approx. 10 pictures/second (Speed priority) Approx. 6 pictures/second (Image priority) [3M (4:3), 2.5M (3:2) or 2M (16:9) is selected as the picture size.]
Number of recordable pictures:	Approx. 15 to 100
Shutter speed:	8 seconds to 1/2000th of a second [STARRY SKY] Mode: 15 seconds, 30 seconds, 60 seconds
Exposure (AE):	Programme AE Exposure compensation (1/3 EV Step, −2 EV to +2 EV)
Metering mode:	Multiple
LCD monitor:	2.7″ TFT LCD (Approx. 230,000 dots) (field of view ratio about 100%)
Flash:	Flash range: [ISO AUTO] Approx. 60 cm (1.97 feet) to 5.3 m (17.4 feet) (Wide)
Microphone:	Monaural
Speaker:	Monaural
Recording media:	Built-in Memory (Approx. 40 MB)/SD Memory Card/SDHC Memory Card/SDXC Memory Card
Recording file format	
Still Picture:	JPEG (based on “Design rule for Camera File system”, based on “Exif 2.21” standard)/DPOF corresponding
Pictures with audio:	JPEG (based on “Design rule for Camera File system”, based on “Exif 2.21” standard)+“QuickTime”
Motion pictures with audio:	AVCHD Lite/QuickTime Motion JPEG

Interface	
Digital:	“USB 2.0” (High Speed) ∗ Data from the PC can not be written to the camera using the USB connection cable.
Analogue video/ audio:	NTSC/PAL Composite (Switched by menu) Audio line output (monaural)
Terminal	
[AV OUT/DIGITAL]:	Dedicated jack (8 pin)
[HDMI]:	MiniHDMI TypeC
Dimensions:	Approx. 97.8 mm (W)×54.8 mm (H)×26 mm (D) [3.85″ (W)×2.15″(H)×1.02″ (D)] (excluding the projecting parts)
Mass:	Approx. 159 g/0.35 lb (with card and battery) Approx. 137 g/0.3 lb (excluding card and battery)
Operating temperature:	0 °C to 40 °C
Operating humidity:	10% to 80%

Battery Charger (Panasonic DE-A66A): Information for your safety

Input:	110 V to 240 V ~ 50/60 Hz, 0.2 A
Output:	4.2 V ⎓ 0.65 A (Battery charging)

Battery Pack (lithium-ion) (Panasonic DMW-BCG10E): Information for your safety

Voltage/capacity:	3.6 V/895 mAh

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Panasonic Corporation
Web Site: http://panasonic.net

Pursuant to at the directive 2004/108/EC, article 9(2)
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